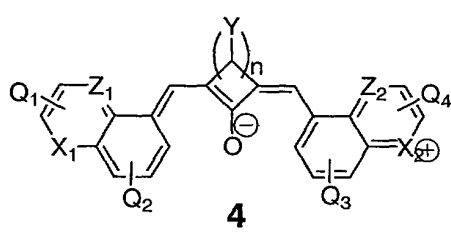
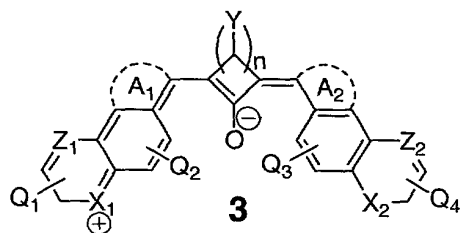
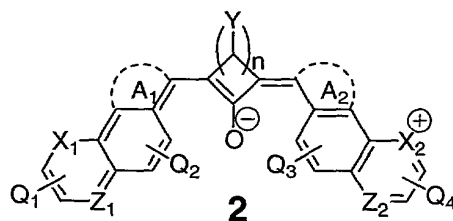
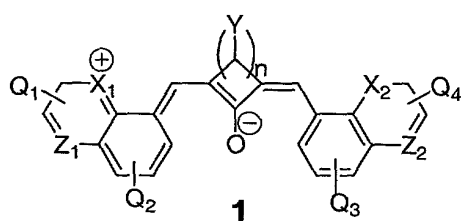


## CLAIMS

1. An infrared dye wherein the dye comprises two bridged diarylpolymethine type dyes or derivatives thereof connected together at either the 3, 4, 5 or 6 position by a central moiety such that the two dyes are located on each side of the central moiety, wherein the infrared dye absorbs strongly in the near infrared region of the spectrum but poorly in the visible region of the spectrum.
2. An infrared dye according to claim 1 wherein the central moiety is selected from the group consisting of squarylium, croconium, methinologs thereof and derivatives thereof.
3. An infrared dye of formula 1, 2, 3 or 4 as set out hereunder:



- wherein A<sub>1</sub> and A<sub>2</sub>, taken individually, is/are absent or selected from the group consisting of a 5-membered polyene ring containing 0, 1 or 2 substituents that are selected from the group R;

- X<sub>1</sub> and X<sub>2</sub> are individually selected from the group consisting of oxygen, sulfur, selenium, tellurium, CR<sub>1</sub>R<sub>2</sub>, NR<sub>1</sub>, SiR<sub>1</sub>R<sub>2</sub>, GeR<sub>1</sub>R<sub>2</sub>, PR<sub>1</sub> where R<sub>1</sub> and R<sub>2</sub>, which may be the same or different, are selected from the group R;

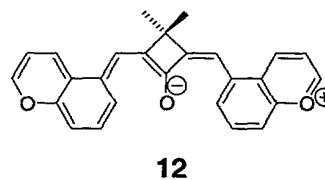
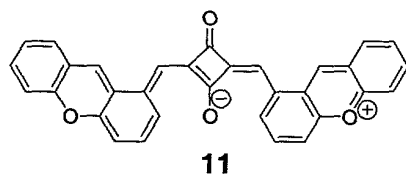
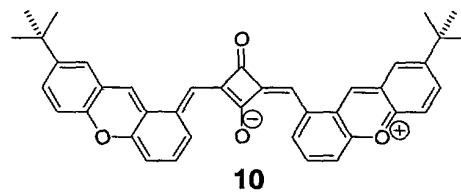
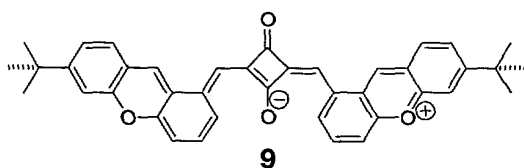
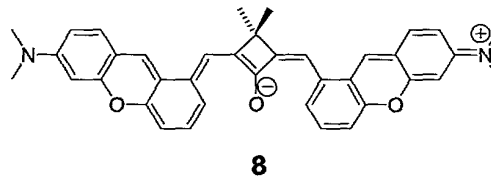
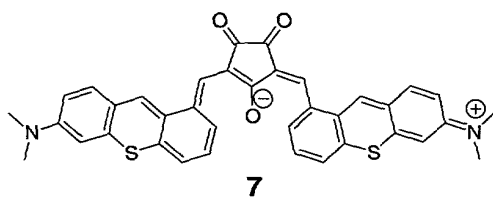
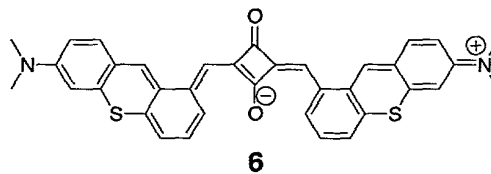
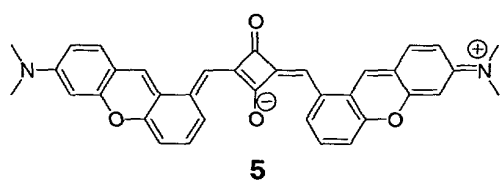
- Z<sub>1</sub> and Z<sub>2</sub> are individually selected from CR<sub>3</sub> or N where R<sub>3</sub> is selected from the group R;

- Q<sub>1</sub>, Q<sub>2</sub>, Q<sub>3</sub> and Q<sub>4</sub> are individually selected from the group consisting of R<sub>4</sub>, a fused 6-

membered aromatic ring optionally substituted with 1 to 4 substituents individually selected from  $R_5$ , and fused polyaromatic rings optionally substituted with one or more substituents selected from  $R_6$  wherein  $R_4$ ,  $R_5$  and  $R_6$  are individually selected from the group R ;

- R is the group consisting of hydrogen atom, a substituted or unsubstituted alkyl group, a substituted or unsubstituted aryl group, a substituted or unsubstituted aralkyl group, a halide atom, a hydroxy group, a substituted or unsubstituted amine group, a substituted or unsubstituted alkoxy group; and
- n is 1 or 2 or 3.

- 10 4. An infrared dye according to claim 3 selected from:



5. An infrared absorbing compound according to claim 1 wherein one or more polar group substituents such as  $-SO_3H$ ,  $-NH_2$  and  $-CN$  are utilized.

6. An infrared printing ink comprising a colorant, wherein the colorant is a dye in accordance with claim 1 or claim 2.
7. An infrared printing ink according to claim 5 which is suitable for ink jet printing ink or offset printing.